

# **PRE-REHABILITATION PLAN SPECTACLE LAKE**

Okanogan County, Washington  
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Fish Program/Fish Management Division/Region2  
Ephrata, Washington  
Updated July 2013

## **PROPOSAL**

### **Justification for Proposed Rehabilitation**

- Spectacle Lake is considered one of the most productive large lakes in Okanogan County and supports three resorts. It is a lake of statewide significance, with potential maximum opening day crowds approaching 500 anglers. The lake is also a storage reservoir for the Whitestone Reclamation District and supplies water for surrounding croplands. Historically, the lake was planted with 125,000 – 150,000 fingerling rainbow, which produced an excellent fishery for 10–12 inch trout the following year. Illegal introductions of spiny ray fishes in recent years, has seriously compromised this once great fishing lake. Fingerling plants of rainbow can no longer survive to yearling size due to competition and predation with warmwater species such as bluegill, yellow perch, and largemouth bass. Legal plants of rainbow trout, up to 50,000 (6”-12”) fish yearly are now needed to sustain the fishing, but are much more expensive (\$45,000 yearly) to produce at the hatcheries and could be used at other less productive waters instead. In addition, angler surveys indicate a preference for fingerling fish that have experienced an entire growing season in the lake versus catchable trout that are planted just prior to the opener. Treatment would restore Spectacle Lake back to a quality trout fishery.
- Primary management of these waters is for trout only.
- Lake rehabilitation with rotenone was a successful management tool for Spectacle Lake in 2005, which was the last time the lake was treated. A concentration of 3ppm was necessary to remove brown bullheads, pumpkinseed sunfish, bluegills, largemouth and smallmouth bass..

### **Physical Description of Water Proposed for Rehabilitation**

- Water: **Spectacle Lake, Okanogan County, Washington**
- Location: Sec 2-4-9-10-11, T38N R26E WM
- Surface acres: 307
- Maximum depth: 60 feet
- Average depth: 32 feet
- Volume: 9,754 acre feet
- Outlet: None
- Stream: Miles: n/a Flow: n/a
- Public access: WDFW access site with boat launch facilities
- Land ownership: Public 40% / Private 60%;
- Established resorts: Three (Sonora Point Resort, Spectacle Lake, and Spectacle Falls)

## **Proposed Management Actions**

- Water: **Spectacle Lake, Okanogan County**
- Target species: yellow perch, bluegill, largemouth bass
- Date last rehabilitated: October 17-20, 2005
- Proposed treatment date: October 2013
- Replanting date: Late-spring 2014
- Species: Rainbow trout and kokanee
- Stocking: 30,000 catchable (8-10 inch) rainbows in the first year only, 50,000 – 75,000 fingerling rainbow and 50,000 fingerling kokanee on a yearly basis
- Proposed toxicant: Rotenone, powder and liquid
- Concentration: 2 ppm
- Amount of rotenone at 5% active ingredient: 52,186 lbs powder, 60 gal. liquid
- Method of application: pumper boats - slurry and spray; ATV with sprayer; small boat with small sprayer, backpack sprayers
- Crew description: Leader **Chad Jackson**, Personnel 18-20

## **PURPOSE**

- Spectacle Lake has been managed as lowland lake trout water since the 1950's. Complete rehabilitation is the only feasible method of restoring these waters to the trout type of management scheme. Complete removal of all competing species is the goal of the rehabilitation.

## **INTENDED OUTCOME/MEASURE OF SUCCESS**

- We intend to restore Spectacle Lake to its popular harvestable trout fishery, and improve its popularity by maintaining quality trout throughout the duration of the season. Success of this measure will be apparent during annual creel surveys. Given a reasonable chance of eliminating the populations of undesirable species, the beneficial effects should be noticeable one-two years post treatment.

## **RESOURCE IMPACTS**

- Target species: bluegill, largemouth bass, yellow perch
- District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of our rehabilitation plans. Due to the documentation of common loons using Spectacle Lake for foraging purposes, the lake will be restocked with an adequate number of smaller fingerling trout. No other concerns were voiced.
- According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of the population average 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so.

- Participation in the trout fisheries should exceed that currently found for existing fisheries. The water in the lake is used solely for recreation and irrigation, which, during mid-October and November does not occur. Dead fish along the shoreline may be offensive to the property owners for a short time after treatment.
- Professional biologists and other naturalists have visited this site frequently over the past 50 years. Common loons have recently been listed as a Washington State sensitive species. Loons have been known to use Spectacle Lake as a foraging area. Fingerling and larger rainbow trout will be planted in the lake in the early spring for the fishery as well as providing forage fish for any loon population using the lake at that time.

### **MITIGATING FOR ADVERSE IMPACTS**

- Trout survival and growth will be greatly enhanced. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake. Disturbance of waterfowl during treatment or by the anticipated fishery will be offset by increased food availability as the uncontrollable numbers of spiny-rayed fishes are eliminated in favor of easily balanced populations of trout. It is in the interest of all species being managed to refrain from over-taxing the food-base.
- Water will be confined to the lake proper, since there is no outfall at this time of the year.
- Common loons use the lake for foraging during the spring and summer. Fingerling and larger fish plants during this time will provide the needed forage species for the loon.
- Protective gear for the eyes, face, hands and clothes will be supplied on-site for all purveyors of rotenone.
- The lake will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

### **RECREATIONAL IMPACT**

- Recreational angling opportunity will be increased if the undesirable species are removed from Spectacle Lake. The level of participation will dwindle to almost nothing if no action is taken immediately. Given the success of the planned management action, as many as 10,000 fishing days are estimated for the season. Anglers should average about four-five fish per trip if the treatment is successful. Yearling trout should average about 11 inches. Carryovers should be expected to be about 20 percent of the catch, and average 15 inches for 2-year-old fish.

### **ECONOMIC IMPACTS**

- Rehabilitation would restore the fishery and associated economic activity. An estimated 5,000 or more trips will be made to Spectacle Lake as a result of the proposed management action, with an economic impact totaling \$660,000 per year (WDW estimate of \$132 per trip). Fingerling plants will cost the agency \$10,000, which is substantially less than the \$45,000 it now costs to produce the larger fish needed to provide a fishery.

- The cost of treatment will be approximately \$75,000, but the increase in license sales and subsequent boost to the local economy will more than offset that loss within two-three years after treatment.

### **RELATED MANAGEMENT ACTION**

- Approximately 30,000 catchable (8"-10") and 100,000 fingerling trout (50,000 rainbow and 50,000 kokanee) will be stocked in early spring to provide immediate fishing opportunity. After the first year, subsequent fish plants will consist of fingerling trout only (rainbow and kokanee). Creel checks will be done annually on Spectacle Lake, as well as population analysis to help in future management plans.

### **PUBLIC CONTACT**

Public concern over the increasing numbers of lakes in Okanogan County with undesirable species infestations prompted this action.

A meeting will be held on July 30<sup>th</sup>, 2013 at the City Council Chamber at Tonasket City Hall, Tonasket, WA from 7-9 pm to discuss lake rehabilitation plans with lakeshore residents, irrigation district members, resort owners, and the general public.

**Initiated by:** Region Two Fisheries Management staff